

AMENDMENTS TO THE CLAIMS

Claim 1 -15 (Canceled)

16. (Previously Presented) A security gate assembly comprising:
an elongate gate arm movable along a defined pathway of travel;
a DC motor having an output disposed to provide a torque upon receipt of a first series of output pulses;
a linkage mechanism attached to one end of said gate arm and to the DC motor output and disposed to cause rotation of the gate arm in accordance with the DC motor output; and
an adaptive control circuit disposed to monitor a plurality of operating conditions including data concerning the weight of the gate arm, and to develop a signal indicative of the position of the gate arm, said adaptive control circuit providing said first output pulses to said DC motor in response to the plurality of operating conditions including the weight of the gate arm such that said first output pulses are varied in accordance with at least said signal indicative of the position of the gate arm and said data concerning the weight of the gate arm.

17. (Canceled)

18. (Previously Presented) The invention as in claim 16 wherein said elongate gate arm is of sufficient length to impede the passage of a motor vehicle.

19. (Canceled)

20. (Previously Presented) The invention as in claim 16 wherein the adaptive control circuit is further disposed to provide second output pulses to cause counter-rotation of the gate arm.

21. (Previously Presented) The invention as in claim 16 wherein the adaptive control circuit senses a relative position and speed of the gate arm as it traverses its defined pathway of travel.

22. (Previously Presented) The invention as in claim 21 wherein the adaptive control circuit provides an output signal to the DC motor to cause the gate arm to cease movement along the pathway of travel when a change in angular velocity is sensed.

23. (New) The invention as in claim 22 wherein the adaptive control circuit includes a digital-to-analog converter circuit provide the output signal in analog form to the DC motor.

24. (New) The invention as in claim 16 wherein the adaptive control circuit includes a time processing unit for determining position and velocity of the DC motor based upon encoding pulses received from the DC motor.

25. (New) The invention as in claim 16 wherein the linkage mechanism comprises a four-bar linkage member for coupling said DC motor output with said gate arm.

26. (New) The invention as in claim 23 wherein said linkage mechanism further includes a curved link piece attached to both said DC motor output and said gate arm.

27. (New) The invention as in claim 16 wherein the defined pathway of travel includes a generally horizontal position and a generally vertical position.

28. (New) The invention as in claim 27 wherein the linkage mechanism adjusts the DC motor output such that the speed of the gate arm varies sinusoidally between the generally horizontal position and the generally vertical position.

29. (New) The invention as in claim 16 wherein the security gate assembly further comprises at least one inductive loop detector communicating with the adaptive control circuit for detecting presence of a vehicle.

30. (New) The invention as in claim 16 wherein the security gate assembly further comprises a vending device communicating with the adaptive control unit.

31. (New) The invention as in claim 30 wherein the vending device is selected from the group consisting of a card reader, a camera, and a vending machine.

32. (New) The invention as in claim 16 further comprising a Universal Power Supply adapted to accept AC voltage and operable to supply 24 volt DC power to the DC motor.